



REVIEW OF THE COMMONWEALTH'S MOBILE DEVICES

AS OF
SEPTEMBER 2015

Auditor of Public Accounts
Martha S. Mavredes, CPA

www.apa.virginia.gov

(804) 225-3350



EXECUTIVE SUMMARY

In January 2013, Virginia Information Technologies Agency (VITA) issued the first comprehensive set of standards governing the management and use of mobile devices. Prior to this, agencies had very little guidance or requirements on how to manage mobile devices. The standards adequately address the assignment, evaluation of need, protection, monitoring, and usage of mobile devices. However, since VITA issued the standards half way through our audit period, many agencies did not begin implementing or following the standards until sometime during 2013 and some agencies were not aware of the standards at all.

Eighteen out of 24 agencies and institutions of higher education surveyed do not have internal policies and procedures over mobile devices that adequately address the requirements in Chapter 806 of the 2013 Virginia Acts of Assembly or that comply with the standards in VITA's "Mobile Communications Use Technical Topic Report" (Tech Topic). Agencies do not have all of their mobile devices on the most cost effective plans and are not properly managing mobile device costs as evidenced by the following statistics for 2013:

- 990,525 unused minutes within pooled plans;
- \$558,435 in recurring minute and data overage charges;
- \$130,196 in roaming charges;
- \$1,590,533 for mobile devices that were unused for six to twelve months of the year;
- \$16,979 for 34 mobile devices purchased at full price; and
- \$9,528 for 143 pagers on hand that were not in use at just one agency, with the potential for more at other agencies.

The above statistics are results of agencies not having easy access to usage data for monitoring and agencies lacking the proper policies and procedures over mobile devices to comply with the Tech Topic.

VITA's current billing review, verification, and distribution process is very time consuming and inefficient. In response to this issue, VITA has contracted with a vendor to implement a telecommunications expense management and customer billing solution in 2016 that should provide agencies with the data they need to monitor and manage their mobile devices. If agencies implement and follow internal policies and procedures over mobile devices that comply with the Tech Topic, the Commonwealth should experience an overall reduction in expenses related to mobile devices.

- TABLE OF CONTENTS -

	<u>Pages</u>
EXECUTIVE SUMMARY	
INTRODUCTION	
Objectives	1
Scope and Methodology	1 - 3
MOBILE DEVICE POLICIES AND PROGRAM	
Policies and Procedures	3 - 11
Management of Device Inventory	11 - 12
Bring Your Own Device	12 - 13
USAGE EVALUATION AND COST ANALYSIS	
Pooled Plans	14 - 15
Overages	16 - 17
Roaming	17 - 18
Zero Use Devices	18 - 20
Full Price Purchases	20 - 22
Pagers	22 - 23
Billing	23 - 24
New Telecommunications Provisioning, Management, and Customer Re-billing Solution	24 - 26
CONCLUSION	26 - 27
TRANSMITTAL LETTER	28
AGENCY RESPONSE	29
RESPONSIBLE OFFICIALS	30

INTRODUCTION

Objectives

The Auditor of Public Accounts conducted a review of the Commonwealth of Virginia's cell phones and other telecommunication devices. The objectives of this review are to:

- Perform a review of mobile devices (cell phones, pagers, and air cards used with laptops and tablets), the usage plans (including voice, text, and data), and the related costs.
- Determine whether the Virginia Information Technologies Agency (VITA) has implemented adequate guidance over the management of these devices.
- Determine whether agencies are following the guidance and using the most cost effective plans.
- Determine whether there are any devices, such as pagers, that are obsolete but still in use.

Scope and Methodology

VITA's role in telecommunications is to act as a reseller of wireline and wireless services to its customers. These services include procurement and management of statewide telecommunication contracts, ordering and provisioning, vendor invoice management, customer support, consolidated rebilling to customers, and reporting. This review focuses on how VITA and state agencies manage Commonwealth owned mobile devices and their related costs. VITA customers include state agencies, state institutions of higher education, and participating localities. This review only includes wireless services at state agencies and institutions of higher education (agencies).

Currently, VITA's wireless telecommunication supply chain includes five wireless carriers and three specialty vendors for paging services. VITA also contracts with five other vendors for two-way radios, which are not included in the scope of this review.

Wireless Telecommunications Service Providers

Table 1

WIRELESS SERVICE	VENDOR
Cellular	Verizon
Cellular	Sprint/Nextel
Cellular	AT&T
Cellular	US Cellular
Cellular	NTelos
Paging	Aquis Communications
Paging	Spok Inc.
Paging	Afton Communications Corp.

Source: VITA website, Statewide Contracts, Telecommunications - Wireless

This review focused on calendar years 2012 and 2013 cell phone and telecommunication activity. We obtained telecommunication services expense data from the Commonwealth Accounting and Reporting System (CARS) for calendar years 2012 and 2013, which totaled \$42.8 million and \$43.3 million, respectively. These totals include both wireline and wireless expenses because CARS does not provide enough detail in order to separate out wireless expenses.

When agencies use one of VITA's statewide contracts, vendors bill VITA the monthly charge for all statewide activity. VITA then bills agencies for their portion of the monthly cost and adds a surcharge, 15.61 percent in 2013, to cover expenses associated with VITA's overhead. Since payment of wireless services flows through VITA to the vendors, we obtained expense details from VITA's internal accounting system. Table 2 represents the wireless vendor vouchers with an invoice date during calendar year 2012 or 2013. The amounts in Table 2 represent the amounts vendors billed VITA and do not include the surcharge that agencies pay VITA. In addition, the amounts are not what VITA billed agencies or what the agency paid for the services because VITA and vendor adjustments made based on disputed charges and billing errors are not represented in the activity.

Wireless Billed Services

Table 2

VENDOR	2012	2013
Verizon	\$ 9,578,150	\$11,395,510
Sprint/Nextel	1,076,066	543,547
AT&T	668,332	438,108
US Cellular	168,759	105,566
NTelos	31,690	62,481
USA Mobility Wireless, Inc.	289,385	229,228
Grand Total	\$11,812,382	\$12,774,440

Source: VITA's internal accounting system (PeopleSoft)

In addition to CARS and VITA's internal accounting system data, we also obtained monthly cellular usage data for calendar years 2012 and 2013 from VITA. This data included agency names,

phone numbers, peak and off peak minutes used, peak and off peak roaming minutes, monthly access charges, feature charges, air overage charges, roaming charges, call counts, roaming counts, text counts, text charges, data use, data overage charges, total charges, user names, and the vendor and plan information. This data is the basis for the majority of the analytical reviews completed. VITA also provided international calling and pager data separately.

To determine if the Commonwealth has implemented adequate guidance over the management of cell phones and other telecommunication devices, we reviewed VITA's website, the Department of Accounts' Commonwealth Accounting Policies and Procedures (CAPP) Manual, and Chapter 806 of the 2013 Virginia Acts of Assembly. In addition, we requested copies of agency specific policies and procedures related to the issuance, use, and termination of mobile devices from 24 agencies to determine if adequate policies and procedures exist at the agency level.

Since this report covers calendar years 2012 and 2013 and the policies and procedures that agencies had in effect during that time frame, the potential exists that agencies have made changes in the interim that are not reflected in this report. Specifically, VITA issued the Tech Topic in January for 2013, which could have prompted improvements in agency controls.

MOBILE DEVICE POLICIES AND PROGRAMS

Policies and Procedures

Section 4-5.04 GOODS AND SERVICES, Part K, of Chapter 806 of the 2013 Virginia Acts of Assembly (Acts of Assembly) established the following guidance for telecommunication services and devices. The General Assembly first created this requirement in Chapter 890 of the 2011 Acts of Assembly.

- 1. The Chief Information Officer and the State Comptroller shall develop statewide requirements for the use of cellular telephones and other telecommunication devices by in-scope Executive Department agencies, addressing the assignment, evaluation of need, safeguarding, monitoring, and usage of these telecommunication devices. The requirements shall include an acceptable use agreement template clearly defining an employee's responsibility when they receive and use a telecommunication device. Statewide requirements shall require some form of identification on a device in case it is lost or stolen and procedures to wipe the device clean of all sensitive information when it is no longer in use.*
- 2. In-scope Executive Department agencies providing employees with telecommunication devices shall develop agency-specific policies, incorporating the guidance provided in §4-5.04 k. 1. of this act and shall maintain a cost justification for the assignment or a public health, welfare and safety need.*

3. *The Chief Information Officer shall determine the optimal number of telecommunication vendors and plans necessary to meet the needs of in-scope Executive Department agency personnel. The Chief Information Officer shall regularly procure these services and provide statewide contracts for use by all such agencies. These contracts shall require the vendors to provide detailed usage information in a useable electronic format to enable the in-scope agencies to properly monitor usage to make informed purchasing decisions and minimize costs.*
4. *The Chief Information Officer shall examine the feasibility of providing tools for in-scope Executive Department agencies to analyze usage and cost data to assist in determining the most cost effective plan combinations for the entity as a whole and individual users.*

Statewide Requirements

The Department of Accounts has a very limited policy in CAPP Manual Section 20310 that briefly addresses assignment, need, safeguarding, and usage of mobile devices. VITA issued the “Mobile Communications Use Technical Topic Report” (Tech Topic) on January 17, 2013. This report establishes standards that are applicable to all Executive Branch state agencies and institutions of higher education that are responsible for the management, development, purchase, and use of information technology resources in the Commonwealth. These VITA standards adequately address all of the requirements set out in the Acts of Assembly noted above and are the Commonwealth’s first complete set of standards that provide agencies with the guidance they need to manage mobile devices and the related costs properly.

Agency-Specific Policies

To address the Acts of Assembly requirement for agencies to develop agency-specific policies, VITA incorporated the following standard into the Tech Topic:

Mobile Communications Use Policy – *Each agency shall develop an agency mobile communications use policy. The agency policy may be more restrictive than the requirements herein, but may not be less restrictive.*

We evaluated the policies and procedures related to the issuance, use, and termination of mobile devices that were in effect during our audit period for 24 agencies to determine whether they adequately address the required controls set out in Section 4-5.04 k. 1 of Chapter 806. The required controls include the following:

1. Assignment of device(s);
2. Evaluation of need of device(s);
3. Safeguarding;
4. Monitoring;
5. Usage of telecommunication devices;
6. Requiring employees to sign an Acceptable Use Agreement defining the employee's responsibility when they receive and use the telecommunications device; and
7. Some form of identification must be present on a COV device in the event the device is lost or stolen, and agencies must have procedures to wipe the device clean of all sensitive information when it is no longer in use.

See Table 3 for the results. Since VITA issued the Tech Topic halfway through our audit period, agencies may have implemented changes to their policies and procedures since December 2013 that are not reflected in Table 3.

**Adequacy of Entity Policies and Procedures over Mobile Devices
For the Audit Period January 1, 2012, through December 31, 2013**

Table 3

Internal Controls over Mobile Devices								
Agency/Institution of Higher Education	Count of devices as of December 2013	Assignment of device(s)	Evaluation of need	Safeguarding	Monitoring	Usage of mobile devices	Acceptable Use Agreement	Identification on device(s)
Central State Hospital	47	Y	Y	Y	Y	Y	Y	N
Central VA Training Center	97	Y	Y	N	N	Y	N	N
College of William and Mary	34	N	N	N	N	N	N	N
Department for Aging and Rehabilitative Services	406	Y	Y	Y	N	Y	Y	N
Department of Agriculture and Consumer Services	315	Y	Y	Y	N	Y	Y	Y
Department of Corrections	1,910	Y	Y	Y	Y	N	N	N
Department of Game and Inland Fisheries	706	N	N	N	N	Y	Y	N
Department of General Services	229	Y	Y	Y	N	Y	Y	Y
Department of Health	1,202	Y	Y	N	N	Y	Y	N
Department of the Treasury	27	N	N	N	N	N	N	N
Department of Transportation (Central Office and NOVA)	2,751	Y	Y	Y	Y	Y	Y	Y
Eastern State Hospital	83	Y	Y	Y	Y	Y	Y	Y
George Mason University	602	Y	Y	Y	Y	Y	Y	Y
Norfolk State University	343	N	N	N	N	Y	N	N

Internal Controls over Mobile Devices								
Agency/Institution of Higher Education	Count of devices as of December 2013	Assignment of device(s)	Evaluation of need	Safeguarding	Monitoring	Usage of mobile devices	Acceptable Use Agreement	Identification on device(s)
Northern VA Community College	181	Y	Y	Y	Y	Y	Y	Y
Northern VA Training Center	111	Y	Y	Y	N	Y	Y	N
State Corporation Commission	271	Y	Y	Y	Y	Y	Y	Y
University of Virginia	144	Y	Y	Y	N	Y	Y	N
Virginia Information Technologies Agency	357	N	N	N	N	N	N	N
Virginia Museum of Fine Arts	37	N	N	Y	N	Y	Y	N
Virginia State Police	3,026	N	N	N	N	N	N	N
Virginia State University	218	Y	Y	Y	N	Y	Y	Y
Virginia Tech	1,701	Y	Y	Y	Y	Y	Y	Y
Virginia Workers' Compensation Commission	127	Y	Y	Y	Y	Y	Y	Y

Source: VITA Telecommunication Inventory Billing System and agency questionnaires

Legend:

Y Agency has adequate policies and procedures related to this control

N Agency does not have adequate policies and procedures related to this control

The biggest issues noted in Table 3 are agencies not monitoring usage and ensuring mobile devices are on the most cost effective plan. The lack of policies and procedures over these areas contributed to the findings noted in the report section “Usage Evaluation and Cost Analysis” indicating that agencies need more direction and guidance on all of these areas. To address monitoring, the CAPP Manual states that recurring monthly billings for Commonwealth owned cellular telephone usage must be received in the agency fiscal office and be forwarded to the telephone user for review. To build on that, the VITA Tech Topic has the following standard:

Processes to Minimize Cost – *The agency mobile communications use policy shall establish processes to manage and monitor the use of mobile communications devices for purposes of minimizing costs and eliminating unauthorized use.*

- a. This shall be accomplished through evaluation of detailed billing for each device, as appropriate, or shall be provided through a periodic review conducted by a Telecommunications Expense Management firm.*
- b. Internal review processes shall also be established to ensure compliance with the agency policy, including periodic assessments of ongoing individual and agency-wide business justification and plan usage effectiveness.*

OBSERVATION:

The Tech Topic has adequate guidance for agencies in the area of monitoring use and optimizing the most effective cost plan. However, VITA issued the Tech Topic in January 2013. Therefore, it was not in effect for half of our audit period. Some, but not all, agencies have begun performing some reviews and improving their processes.

RECOMMENDATION:

VITA should publicize this Tech Topic to increase awareness and remind agencies of the need to develop and implement policies and procedures over mobile devices to promote proper monitoring of use and having the most cost effective plan in accordance with this Tech Topic.

OBSERVATION:

As noted below in the section “Telecommunication Vendors and Plans,” VITA incorporates contract modifications periodically as needed to accommodate price and plan changes as technology and the cell phone industry advance.

RECOMMENDATION:

Agencies should continually monitor these changes to ensure that each mobile device is on the most cost effective plan as newer plans or pricing may be more economical than their current plans.

OBSERVATION:

Only six out of 24 agencies have policies and procedures covering all of the seven minimum controls found in the Acts of Assembly and elaborated on in the Tech Topic, and three agencies do not have any policies and procedures over the use of mobile devices. The remaining fifteen agencies have varying degrees of policies and procedures.

RECOMMENDATION:

Agencies should create or update existing policies and procedures to ensure that they meet the minimum standards in the Acts of Assembly and the Tech Topic. Policies and procedures should be entity-specific. State level policies alone do not adequately address these seven controls and do not provide the agencies and institutions with procedures of how to implement the controls at their own entity.

Several agencies have additional procedures in their mobile device policies and procedures that other agencies might find useful:

- Eastern State Hospital – Check in and out procedures for shared devices;
- Central State Hospital – “Responsibility for Lost Cell Phones and Pagers” policy and “Return and Care Agreement” that addresses employees reimbursing the agency for lost or damaged devices (when damage is not caused by device malfunction, but employee negligence); and
- State Corporation Commission – Tips for reviewing mobile device bills that could help agencies evaluate current mobile device usage and make changes based on that analysis.

Telecommunication Vendors and Plans

To address the Acts of Assembly requirement for the Chief Information Officer to determine the number of vendors and plans, procure the services, and require the vendors to provide detailed usage data, VITA maintains several statewide contracts for telecommunication services. VITA procured most of these contracts in 2009; however, VITA incorporates contract modifications periodically as needed to accommodate price and plan changes as technology and the cell phone industry advance. The current telecommunication service contracts expire in 2016.

Vendors provide detailed usage data to VITA, with the exception of pagers; however, because of the complexity and volume of the data, VITA does not provide the data to the agencies unless agencies request the data. Agencies can obtain detailed usage data by accessing VITA's online billing system. The billing system includes calling activity and is available for agencies to review. However, the billing system only allows agencies to select specific months for review. Therefore, agencies are unable to see if a particular number has gone unused for a significant period, or incurred roaming or overage charges consistently. To get this detail, agencies can go into VITA's Cell Phone Application, a cost optimization tool, but have to select each individual number separately, an inefficient method of review, especially for agencies with large quantities of mobile devices.

VITA has recognized the inability of its current billing system to provide agencies with the information they need to monitor mobile device usage properly. See section "New Telecommunications Provisioning, Management, and Customer Re-billing Solution."

OBSERVATION:

VITA's current billing system is inefficient and ineffective. In May 2015, VITA selected the vendor Telesoft, a telecomm management solutions and services company to implement a new telecommunications expense management and customer billing solution. VITA estimates that implementation will occur in 2016. In addition, VITA's telecommunication service contracts expire in 2016.

RECOMMENDATION:

When VITA procures new telecommunications services in 2016, the contracts should require vendors to provide data in the format needed for the new telecommunications expense management and customer billing solution.

Usage and Cost Data Tools

To address the Acts of Assembly requirement for the Chief Information Officer to provide tools for agencies to analyze usage and cost data, VITA has a web based Cell Phone Application that stores 12 months of data for each mobile device by agency. This application is available only to customer Telecommunications Coordinators and VITA administrators. The tool lists all mobile

devices for an agency and recommends the lowest cost plan available from the same wireless provider that meets the users' needs. Cross-carrier optimization comparisons are not available.

The Telecommunications Coordinators can drill down on each mobile device number to see the mobile device plan, calling minutes, and cost for each of the previous 12 months. The lowest cost is derived by averaging the minutes used in each of the previous 12 months, calculating a potential bill for each available mobile device plan offered by the current wireless provider, and identifying the lowest cost plan. Customers wishing to implement any changes based on the tool's recommendations must submit a request to change the plan. We did not perform procedures to ensure the application was selecting the lowest cost option based on usage.

Management of Device Inventory

In relation to the management of device inventories and the assignment, the Tech Topic has the following standard:

Device Inventory – *The agency mobile communications use policy shall establish a process to maintain a current inventory of the wireless devices used by the agency. At a minimum, the inventory shall include a description of each device, the service provider for each device and the individual to whom the device is issued.*

Five out of 24 agencies provided inaccurate inventory lists that included devices assigned to terminated employees, devices the agency no longer has, and devices that were reassigned but not updated in the list.

Although there is no requirement for agencies to notify VITA when there is a change in ownership or assignment of a device, the Tech Topic does have standards for on-boarding and off-boarding of mobile devices.

On Boarding and Off Boarding - *The agency mobile communications use policy shall specifically detail the on-boarding and off-boarding processes.*

- a. The on-boarding process shall include the review and approval process for initiating service as well as a requirement for the employee to read and to acknowledge awareness and acceptance of the agency and statewide policies. This acknowledgement shall be in writing and include provisions for the agency to withhold the value of the commonwealth owned device from the employee's pay if it is not returned upon request or termination.*
- b. The off-boarding process shall include the recovery of any commonwealth owned devices from the departing employee, the cancellation of services, removal of information from the device and the storage or disposal of the device.*
- c. The off-boarding process shall include the timely removal or wiping of all commonwealth data and information from the non-commonwealth owned mobile device of the departing employee.*

OBSERVATION:

Some agencies are not maintaining up-to-date and accurate mobile device inventory listings for changes occurring due to employee termination, device reassignment, device disposal, and service plan changes.

RECOMMENDATION:

Agencies must update inventory listings whenever there is a change in assignment, service, or device. This not only helps with the management of agency assets but also aids in the billing review process. Agencies should review their current mobile device inventory listings to ensure that they are up-to-date (i.e., remove terminated employees, validate that devices, lines, and owners are correct) and continue to keep the listings accurate in the future.

The agency's telecommunications coordinator, in conjunction with the appropriate supervisor, should evaluate the current usable state of all mobile devices collected from terminated employees. Agencies either should turn devices into surplus property (if deemed unsalvageable) or save them for future use. If the agency chooses to surplus the asset, then the agency should also terminate the device's service with VITA. If the agency has immediate use for the device, then they should assign the device accordingly. However, if the agency does not have an immediate use for the device but would like to keep and use it for the future, the agency should request that VITA suspend the service for the line until they determine how to use the device so they are not paying for service they are not using.

Bring Your Own Device

The Commonwealth has a program called "Bring Your Own Device" (BYOD) that permits Commonwealth employees to access work information from personal mobile devices (i.e., smartphones, tablets). Only agencies that are on the Commonwealth infrastructure and have completed messaging transformation may participate in the program. The program allows employees to eliminate their Commonwealth owned device and use their personal device for both work and home life. The technology for the program separates personal data from work data. It protects Commonwealth data and systems using multiple layers of security, including encryption, password policies, remote wipes, and more. Agencies pay an upfront license fee of \$143 per device, a monthly fee of \$15 per device, and a \$45 monthly stipend to employees.

Agencies may choose whether they will participate in the BYOD program. Below is a list of potential positive and negative consequences identified by participating and non-participating agencies.

Potential Pros and Cons of the BYOD Program

Table 4

Pros	Cons
<ul style="list-style-type: none"> Reduces the burden of managing mobile devices and reviewing bills, by not having to monitor usage and appropriateness of charges 	<ul style="list-style-type: none"> Concerns with security and confidentiality of sensitive information on personal devices
<ul style="list-style-type: none"> Reduces paying for mobile devices that are rarely used for employees required to have them for safety purposes 	<ul style="list-style-type: none"> Support for users who are not familiar with smartphones
<ul style="list-style-type: none"> Saves money because the agency is only responsible for the originating license fee and approximately \$60 per month for each device. Overage charges, such as data usage or roaming, are the responsibility of the employee instead of the agency. 	<ul style="list-style-type: none"> Unwillingness of employees to consider the program due to an impression of a lack of separation between personal data and work data on the personal device
	<ul style="list-style-type: none"> High costs to implement new infrastructure to help manage user devices

Source: Agency Inquiries

Some of the potential negative aspects of the program may be misconceptions surrounding the technology and security of the program.

OBSERVATION:

Some agencies and employees may have misconceptions about the safety and security of the BYOD program and technology supporting the program preventing them from engaging in the program.

RECOMMENDATION:

VITA should educate agencies about the BYOD program and address any questions and concerns that agencies may have. Agencies should ensure that they have a full understanding of the program and perform a cost-benefit analysis to determine whether the BYOD program would be a viable and cost-effective option for those employees who are willing to participate in the program.

USAGE EVALUATION AND COST ANALYSIS

Pooled Plans

Cellular pool plans share minutes of cellular usage among two or more mobile device users. There is a fixed monthly cost, covering service and minutes for each user in the pool. Like other cellular plans, there are a number of different pool plans available, each at a different price and with a different number of calling minutes included. These plans are very flexible and customizable to the needs of an agency. As with any cellular plan, pool plan effectiveness comes from having a right-sized plan and by monitoring monthly usage and adjusting the pool minutes up or down, accordingly.

In a non-pooled plan, a user who exceeds the number of plan minutes is subject to paying a pre-determined, per minute charge for each minute that exceeds the plan limit. This charge is in addition to the monthly service charge for the plan. With a pooled plan, one or more users in the pool may exceed their expected minutes of usage without penalty, as long as the usage of all of the users in the pool does not exceed the total minutes of the pool.

During 2013, the Commonwealth had 47 cellular pool plans at 37 different agencies. Pooled plans do not cross between agencies; however, an agency can have more than one pooled plan. The number of users within each pool varies, with the max number of users per pool for the year at 238. Minutes within each pool also varied based on the size and needs of the agency and included up to 19,000 pooled minutes per month. Statewide for 2013, agencies purchased a total of 1,835,200 minutes for use in pooled plans. Of that, 990,525 minutes, over 53 percent, went unused. This calculation only takes into account peak minutes used. Off peak minutes typically do not count against the pool of minutes because the majority of plans include free nights and weekends.

During the year, Virginia State University, Department of Corrections, and Northern Virginia Training Center held the most unused minutes within their agency pools. At Virginia State University, fourteen of the fifteen mobile devices on the pool plan belong to University Police. Department of Corrections is in the process of evaluating and adjusting its pool plans and could not currently explain why they had unused minutes. Northern Virginia Training Center is a 24/7 Intermediate Care Facility for Intellectually Disabled individuals and established the mobile devices because it is essential for all residential homes to have 24/7 phone service in all circumstances, regardless of an emergency. Although these entities need the service to be available, they do not need to have a large number of minutes available on the plan.

Table 5

Agency Name	Pool Minutes (Year)	Peak Minutes Used (Year)	Unused Pool Minutes	Unused Pool Minutes Yearly Average %
Virginia State University	117,600	21,228	96,372	81.9%
Department of Corrections	216,000	141,281	74,719	34.6%
Northern Virginia Training Center	67,200	170	67,030	99.7%

Source: VITA Telecommunication Inventory Billing System

Each mobile device in a pooled plan is either an “Add a Phone” with no minutes or a mobile device that contributes any range of minutes to the pool.

For example, for the Sprint CDMA Business Essentials Pooled Plan based on December 2013 pooled plan data, each mobile device included in a pool has the following minutes associated with it for the stated cost. When a pool has excessive unused minutes each month, an agency has the potential to save anywhere from \$17.26 per month for switching one mobile device from a 400 minute device to an “Add a Phone” with no minutes to saving \$69.09 per month for switching one mobile device from a 2,000 minute device to an “Add a Phone” with no minutes. That projects to savings ranging from \$207.12 to \$829.08 per year for that one mobile device.

Table 6

SPRINT CDMA BUSINESS ESSENTIALS POOLED PLANS	Monthly Cost
CDMA Business Essentials Add a Phone – No Minutes	\$ 17.28
CDMA Business Essentials 400 Minutes	34.54
CDMA Business Essentials 1000 Minutes	51.81
CDMA Business Essentials 1400 Minutes	69.09
CDMA Business Essentials 2000 Minutes	86.37

Source: VITA Telecommunication Inventory Billing System

OBSERVATION:

Pooled plans are customizable to meet individual agency’s needs. It is unreasonable for agencies consistently to have large amounts of unused minutes, as it shows they are not monitoring their usage and re-evaluating needs to prevent wasting Commonwealth resources.

RECOMMENDATION:

Each agency should conduct periodic reviews of pooled plans based on historical department usage data maintained by VITA. If significant amounts of minutes remain unused each month, agencies should consider reducing the number of minutes within the pool by making some of the mobile devices “Add a Phones” with no minutes. This will reduce the overall pool of minutes, while still keeping the same number of lines.

Agencies with more than one pooled plan should also determine whether joining pools together is a more cost effective option. Alternatively, for emergency lines used infrequently, agencies should consider if it is more cost effective to implement a Pay As You Go plan.

Overages

Agencies incur overage charges when users of mobile devices exceed the device's contracted minutes, data, or text in any given billing period. In addition to the standard monthly and feature costs per device, VITA provided data for monthly overage charges for calls made in the local area (VA/DC), long distance calls, text messaging, and roaming. When analyzing this data, we assumed that any charges exceeding the monthly and featured add-on costs were associated with overage charges. We did not consider roaming charges since we performed a separate review of those charges. For more information, see the section entitled "Roaming." Due to a data labeling error in the data provided by VITA for the 2012 "data overage (\$)" field, we only reviewed overage charges incurred in 2013.

During 2013, the Commonwealth incurred a total of \$558,435 in overage charges, with the top five agencies with overages listed in Table 7. Over 75 percent of all agencies and institutions with mobile devices had overages ranging from \$0.23 to \$45,230 for the year. Although Transportation had the highest overage in 2013, Transportation determined that \$33,775 of this overage related to a traffic camera modem with an inappropriate data plan. Transportation discovered this issue and changed the plan to a more cost effective plan prior to our audit so that these overages would not occur again.

Table 7

Agency	Overage
Department of Transportation – Staunton	\$45,230
Department of Corrections	42,602
Department of Health	27,662
Central Virginia Training Center	25,143
Virginia Tech	21,344

Source: VITA Telecommunication Inventory Billing System

As seen in Table 3, only nine out of 24 agencies have policies on monitoring mobile device bills and usage, and the majority of these policies focus on ensuring that the costs are legitimate costs for the agency. The policies often do not address continuous monitoring to ensure each device has the most cost effective plan. In addition, 13 out of 24 agencies were not aware of or do not use the VITA web-based Cell Phone Application that allows Telecommunications Coordinators to analyze usage and determine the best plan.

OBSERVATION:

Many agencies do not have adequate policies and procedures to review and monitor mobile device usage and costs that include not only cost verification but also analysis to ensure each device is on the most cost effective plan.

RECOMMENDATION:

Agencies and institutions need to develop and implement policies and procedures to ensure they only pay appropriate mobile device costs and that each device is on the most cost effective plan.

OBSERVATION:

The majority of the \$558,435 incurred by the Commonwealth in overage charges was associated with individual plans (i.e., devices that were not in a shared or pooled plan). Approximately, \$62,000 (or 11%) was associated with pooled or shared plans.

RECOMMENDATION:

Agencies and institutions should perform an in-depth review of current device usage to determine whether any devices are incurring regular overage charges. If so, the agency should consider placing those devices into a pooled plan to avoid data and call overage.

Roaming

The Commonwealth incurred \$272,703 in domestic and international roaming charges during 2012 (\$142,507) and 2013 (\$130,196). Of this amount, \$66,708 related to international roaming calls. We did not obtain additional data from VITA showing how much of these charges agencies disputed because the dispute resolution information is maintained separately from the billing database and the two sources cannot easily be merged. Therefore, the above amounts may include incorrect charges that have been resolved by agencies during the period under review. We are aware that at least one agency (Department of General Services) successfully disputed \$12,510 of international roaming charges. However, as stated, those charges are included in the above totals.

During 2012 and 2013, the Department of Agriculture and Consumer Services, the Department of Health, and the Department of Corrections incurred the highest amount of roaming charges of all agencies. Each of these three agencies has decentralized operations and field locations across the entire state. There are areas of the state in which these agencies operate that have little to no wireless coverage. In addition, some agencies require interstate or international travel to accomplish business needs. For example, as part of the agency's mission to promote Virginia

agricultural products, Agriculture and Consumer Services employees travel around the world to market, trade, and negotiate goods and services with other states and countries.

OBSERVATION:

Unless otherwise requested in the original Telecommunication Service Request submitted to VITA, the current wireless plans included in the contracts procured through VITA typically offer coverage only in the VA/DC area. However, many agencies are under the assumption that their wireless provider offers 100 percent nationwide coverage.

RECOMMENDATION:

VITA should educate agencies about the difference in the VA/DC area only plan versus the nationwide coverage and the impact of roaming. Agencies should weigh the costs and benefits associated with switching from a VA/DC only plan to a nationwide plan for devices that constantly incur roaming charges. Although this will not fully eliminate roaming charges, it may reduce agency costs associated with calls made and received in roaming areas. Agencies that keep the VA/DC only plans should educate their employees on the plan they have and the impact roaming can have.

Zero Use Devices

VITA provided detailed data for each agency by phone number. When performing analysis of zero use devices, we took into consideration the following data fields, as they specifically relate to device usage:

- Peak and off-peak minutes
- Roaming peak and off-peak minutes
- Data usage (MB, KB, etc.)
- Call count
- Roaming call count
- Text count

For the purpose of this analysis, we assumed that an agency was not using a device if the device's detailed record displayed "0" for all of the above data fields.

The Commonwealth paid approximately \$3.9 million for devices that agencies did not use for a minimum of six months each year in 2012 and 2013. This made up roughly 15.8 percent of total mobile device expenses paid during the two years. Of the \$3.9 million that the Commonwealth spent on these devices, approximately \$2 million were because of unused air cards. The agencies with the highest amounts of zero use devices were the Department of Transportation, Department of Health, Department of Corrections, and Virginia State Police, which together incurred approximately \$1.15 million for devices not used for a minimum of six months each year.

Table 8

Agency Name	Product	TOTAL (\$)	Number of Devices
Department of Corrections	Aircard	\$ 36,791	108
	Mobile Device	139,083	580
Department of Health	Aircard	76,400	205
	Mobile Device	203,091	608
Virginia State Police	Aircard	323,747	958
	Mobile Device	745	3
Department of Transportation – Central Office	Aircard	325,002	1,026
	Mobile Device	46,424	104
Grand Total		\$1,151,283	3,592

Source: VITA Telecommunication Inventory Billing System

OBSERVATION:

As previously stated, more than half of the unused mobile devices are air cards. At the Virginia State Police, its Communications division launched its own internal review of air cards to evaluate current air card inventory, usage, and need for these devices. During the period under review, the Virginia State Police was in the process of replacing old equipment, which significantly contributed to the zero use total amounts.

RECOMMENDATION:

Agencies should review current air card usage to determine if any air cards with little to no usage exist. If the agency determines that employees are rarely using their assigned air cards, the agency should terminate the air cards' service. In addition, agencies should consider reducing the number of air cards and using any remaining air cards as shared devices.

OBSERVATION:

At several agencies, many unused devices were shared devices passed from one employee to the next during shift rotations. Except for a few agencies, most agencies do not have policies and procedures addressing the issuance, use, and return of shared devices.

RECOMMENDATION:

To aid in the management of mobile device inventory and the review of telecommunication bills, agencies should develop a formal check in and out process for shared devices so that usage can be associated with an individual and there can be accountability.

OBSERVATION:

Several agencies assign devices to employees to use while either on-call or in emergencies only. For example, the American Correctional Association (ACA) requires that the Corrections Probation and Parole officers be available around the clock. While officers may never use their assigned device, Corrections must still provide one to its officers in order to meet this ACA standard. At Transportation, many of these air cards are data devices used on snowplows, traffic counters, and bridge sensors and management considers some zero use devices for these purposes as acceptable.

RECOMMENDATION:

In situations like this, agencies should consider the option of Pay-As-You-Go devices or deactivating devices when not in use. Since there is a monthly fee in addition to the usage fee for Pay-As-You-Go devices, agencies should weigh the costs of keeping the current device or replacing it for a Pay-As-You-Go device.

For example, a Verizon line that includes 600 minutes per month costs \$540 per year. If this line switched to a Pay-As-You-Go plan, the line would cost \$100 per year (\$10 monthly access fee), plus \$0.17 per minute for any call. If the phone went unused the entire year, the potential savings are \$440 per year. In addition, at \$0.17 per minute, the agency could use up to 2,588 minutes for the year before exhausting the savings.

Full Price Purchases

During 2012 and 2013, the Commonwealth spent \$23,349 on mobile devices charged at full retail price. Of that amount, the five largest total dollar amounts occurred at the Department of Corrections, Norfolk State University, Department of Agriculture and Consumer Services, Virginia Workers Compensation Commission, and the Department for Aging and Rehabilitative Services. All of the full price purchases were from Verizon, who offers the Commonwealth a discounted price for mobile devices and accessories every ten months per line. In addition, Verizon provides a credit for the replacement or upgrade of a device when it has been in service for two years.

The price agencies paid for new devices range from \$199 to \$649. The general explanation for full price purchases from the five agencies listed above was to replace lost, damaged, or stolen equipment. In one instance, the agency made the full price purchase to replace equipment that did not adequately meet an employee's business need. At another agency, several of the full price purchases occurred because an employee wanted to upgrade from a BlackBerry to an iPhone before the line was eligible for an upgrade.

Full Priced Purchases by Agency

Table 9

Agency Name	Total Cost	Count of Devices
Department of Corrections	\$5,539	10
Norfolk State University	2,499	4
Department of Agriculture & Consumer Services	1,859	4
Virginia Worker's Compensation Commission	1,769	3
Department for Aging and Rehabilitative Services	1,589	5
Department of Social Services	1,099	2
George Mason University	1,099	3
Department of Health	729	2
Office of the Attorney General	649	1
Department of the Treasury	649	1
State Corporation Commission	649	1
Department of Transportation	649	1
Department of Transportation - Lynchburg	649	1
Department of Transportation - Salem	599	1
Science Museum of Virginia	549	1
Virginia State University	549	1
Department of Transportation - Hampton Roads	509	1
Department of Housing and Community Development	479	1
Department of Conservation and Recreation	449	1
Northern Virginia Community College	319	1
Virginia Polytechnic Institute and State University	249	1
Southside Virginia Training Center	199	1
Grand total	\$23,328	47

Source: VITA Telecommunication Inventory Billing System

Discounted equipment and accessory prices are available to all VITA customers for statewide contracts. Carriers normally update these price lists monthly and usually a free or low-cost equipment option is available. These discounts are provided to contract users as a convenience to the customer and are posted on VITA's website. To take advantage of these discounted prices, the line must be eligible for a qualified upgrade or renewal.

OBSERVATION:

Most full price purchases replace lost, stolen, or damaged devices that are not yet due for an upgrade.

RECOMMENDATION:

Agencies should first assign any spare devices to replace lost, stolen, or damaged equipment. If this is not a viable option (i.e., spare devices do not adequately meet the employee's business needs) agencies should transfer the upgrade eligibility from one line to another to take advantage of the low-cost or discounted devices available.

In addition, agencies should implement a policy that requires employees to reimburse the agency to replace devices that have been lost, stolen, or broken if the incident was their fault or due to their negligence. Agencies should incorporate this policy into the acceptable use agreement that employees sign prior to issuance.

OBSERVATION:

Several full price purchases occurred because an employee wanted to upgrade the phone before the line was eligible for an upgrade.

RECOMMENDATION:

When employees wish to upgrade equipment for non-business needs and the line is not eligible for an upgrade, agencies should implement a policy that requires the employee to pay the difference between the full retail price and the discounted contract price of the equipment if it were eligible for upgrade.

Pagers

One objective of this review was to determine whether there are any devices, such as pagers, that are obsolete but still in use. As of December 31, 2013, ninety-five agencies had 2,324 pagers. The Public Safety agencies hold 46 percent of pagers and the Health and Human Resources agencies hold 29 percent of these pagers. On an agency level, Eastern State Hospital, Corrections, State Police, Central Virginia Training Center, and Central State Hospital are the top five agencies with pagers.

Eastern State Hospital had 147 pagers, costing \$614 per month or \$7,368 per year for all of the pagers. Eastern State Hospital assigns some pagers to individuals and the rest to work units so that whoever is on shift uses the pager. Critical positions, such as doctors, nurses, building and grounds, housekeeping, and food service, are eligible to receive pagers. Typically, Eastern State Hospital maintains a stock of approximately 25 unissued pagers as inventory spares. As pagers break,

they return the pagers to the vendor for replacement or remove them from service and eliminate them from billing and inventory. Eastern State Hospital has an automated system for tracking pagers, but does not have any way of tracking usage of pagers, as VITA billings do not include a breakdown of pager calls received.

Corrections had 147 pagers, totaling \$814 per month or \$9,768 per year for all of the pagers. As a decentralized agency, each facility is responsible for determining need, requesting pagers, monitoring pagers, and submitting disconnection requests. Corrections did not have an inventory of its pagers. Using the inventory list from VITA, Corrections determined that they were only using four of the 147 pagers and needed to return the other 143 pagers. Corrections has been paying approximately \$794 per month or \$9,528 per year for these unused pagers for an undeterminable amount of time. Some of these pagers have been in service for 15 years; however, we cannot determine how long they have been unused.

The remaining three agencies typically issue pagers to individuals in areas with cellular coverage issues and to various specialty teams within the organizations. Some agencies periodically evaluate the continued need for pagers, while others have never performed this type of analysis. Therefore, there is the potential that these agencies are paying for service on pagers that they are not using.

OBSERVATION:

Agencies are not managing and monitoring the use of pagers, including periodically assessing the pager's necessity. As a result, agencies are paying for pager services they are not using.

RECOMMENDATION:

Agencies should periodically assess the need for pagers by having the party responsible for the pager confirm its use. VITA does not obtain usage data for pagers and; therefore, agencies are unable to tell from a billing perspective if pagers are still in use. Agencies should also re-evaluate the number of spare devices to determine if they are all necessary.

Billing

VITA receives billing and usage data from all of the telecommunications vendors for all agencies and institutions. The vendors provide the data in multiple and inconsistent forms, for example some vendors provide data in an electronic format while some provide it in hardcopy. In addition, there is inconsistency in the data format and content between vendors. VITA must reformat the data into the VITA standard format so they can incorporate the data from all vendors into the VITA billing database, review and verify the billing charges, and create and disseminate bills to all agencies. VITA has created multiple automated reports that validate pricing for plans and equipment and identify potential exceptions. However, VITA must then manually investigate individual exceptions. VITA prints and mails hardcopy bills to all agencies, which reduces agencies'

ability to analyze the bill contents. This very intensive, manual process can require up to a month to review and disseminate each monthly bill. Because the process takes up to a month after the actual billing date to get the bill to agencies, it is difficult for agencies to review the bill details and investigate any discrepancies timely. As a result, disputed and credited charges are not reflected in the billing system. VITA has resources dedicated solely to this process.

VITA understands there are inefficiencies in the current billing process and, in March 2014, issued a Request for Proposals to provide a telecommunications (wireline and wireless) services provisioning (ordering, fulfillment, etc.), asset, expense and usage management, and customer re-billing solution.

OBSERVATION:

The billing review, verification, and distribution process is very time consuming and inefficient.

RECOMMENDATION:

When designing the new system under the Request for Proposal, VITA should ensure that the system could collect, analyze, and distribute billing information electronically using a quicker, more efficient process.

New Telecommunications Provisioning, Management, and Customer Re-billing Solution

VITA recognizes the inefficiencies in the current telecommunications support systems and, in March 2014, issued an RFP for a solution that will replace its legacy in-house systems. The scope of the project includes the following functions:

- Telecommunications product and service catalog
- Ordering and fulfillment
- Inventory management
- Vendor invoice management
- Customer re-billing
- VITA cost allocation
- Customer self-service
- Reporting

- Workflow management
- Internal controls and audit compliance

The scope of the project aims at addressing the various issues, which VITA has dubbed as “pain points” they have identified using the current system and are consistent with the results of this review.

Inefficient mailing of paper bills to customers - VITA issues an actual invoice with full detail to its customers on a monthly basis, and delivers these by state inter office mail and United States Postal Service mail. VITA staff manually prepare the mailings, including printing the bills, separating by customer, collating with any dunning notices, stuffing in envelopes, and mailing. This is inefficient and time consuming for both VITA staff and for customer personnel needing to process the invoice for payment and make their internal cost allocations.

VITA customers lack ready access to online billing detail information - VITA customers are unable to access their VITA telecommunications bills online/electronically, with full access to call detail information, in a user-friendly fashion (such as the use of internal hyperlinks to allow drill-down from higher levels of information to the lowest level of detail).

Burdensome carrier billing data capture - VITA receives a significant share of carrier invoices in paper format, requiring the re-keying of data and work-a-rounds to capture bill detail information. Even when VITA obtains carrier bills electronically, VITA must often rearrange the data to fit VITA’s standard format, and carrier bill layouts change frequently, requiring ongoing work by VITA.

Minimal reporting and analytic tools - Existing reports tend to focus on operations – relatively little effort has been devoted to the development of management reports and the capability for, and tools in support of, extraction and analysis of data for executive decision-making and research (business intelligence). Moreover, a single technical resource must typically create any new reports. No capacity exists for VITA users or customers to develop their own reports.

Cumbersome normalization of various carrier pool billing methodologies - Different carriers use varying approaches to billing for the pooling of call minutes and data usage. VITA bills to customers often include charges from multiple carriers, requiring VITA to translate and normalize carrier pool billing to permit like-to-like comparisons. VITA must do much of this manually, consuming significant staff resources.

VITA business processes need improvement - The business processes for telecommunications services lack streamlining, are not well integrated, and fail to

take advantage of opportunities for automation to reduce the amount of manual processing.

Lack of visibility into and control over the workflow - The current system lacks the capability to easily provide detailed order and payment status information on-demand and lacks workflow management tools.

Dispute resolution is not integrated with the ordering and payment systems - VITA must resolve disputes between itself and the carriers, and between itself and its customers. In both cases, VITA currently handles disputes separately from ordering, fulfillment, and payments.

There is currently a lack of coordination between accounts receivable and customer re-billing - VITA handles accounts receivable in its PeopleSoft Financials accounting system. VITA generates customer bills in the billing system but generates any customer dunning notices in the financial system, and must manually put these together and mail to customers.

Weaknesses in audit transparency and internal controls - VITA's internal auditor has identified issues that the present system has with regard to the tracking of charges from a carrier invoice through to a customer payment, and with identifying, recording, and enforcing changes to roles and responsibilities.

In May 2015, VITA selected the vendor Telesoft, a telecomm management solutions and services company, for this project to implement a telecommunications expense management and customer billing solution. VITA estimates that implementation will occur in 2016.

If effectively designed, this solution could improve the customer service currently experienced by VITA customers. It will reduce the number of hours needed for monthly reconciliations, which will allow for timely billing to customers. In addition, it will allow agencies to efficiently review call details and aid in the monitoring process.

CONCLUSION

In January 2013, VITA issued the first comprehensive set of standards governing the management and use of mobile devices. Prior to this, agencies had very little guidance or requirements on how to manage mobile devices. The standards adequately address the assignment, evaluation of need, protection, monitoring, and usage of mobile devices. However, since VITA issued the standards half way through our audit period, many agencies did not begin implementing or following the standards until sometime during 2013 and some agencies were not aware of the standards at all.

Fourteen out of twenty-four agencies surveyed do not have internal policies and procedures over mobile devices that adequately address the requirements in the Acts of Assembly or that comply with the standards in the Tech Topic. Agencies do not have all of their mobile devices on the most cost effective plans and are not properly managing mobile device costs evidenced by pooled plans with large amounts of unused minutes, plans with recurring minute and data overages, phones incurring roaming charges, and unused phones. In addition, agencies sometimes purchase phones at full price and keep pagers on hand that are not in use. All of these issues result in unnecessary expense to the Commonwealth.

VITA's current billing review, verification, and distribution process is very time consuming and inefficient and agencies do not have easy access to usage data for monitoring. VITA has contracted with a vendor to implement a telecommunications expense management and customer billing solution that should provide agencies with the data they need to monitor and manage their mobile devices. If agencies implement and follow internal policies and procedures over mobile devices that comply with the Tech Topic, the Commonwealth should experience an overall reduction in expenses over mobile devices.



Martha S. Mavredes, CPA
Auditor of Public Accounts

Commonwealth of Virginia

Auditor of Public Accounts

P.O. Box 1295
Richmond, Virginia 23218

September 1, 2015

The Honorable Terence R. McAuliffe
Governor of Virginia

The Honorable John C. Watkins
Chairman, Joint Legislative Audit
and Review Commission

We have audited the Commonwealth's cell phones and other telecommunications devices and are pleased to submit our report entitled **Review of the Commonwealth's Mobile Devices**. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Exit Conference and Report Distribution

We discussed this report with management at the Virginia Information Technologies Agency on September 10, 2015. Management's response to the findings identified in our audit is included in the section titled "Agency Response." We did not audit management's response and, accordingly, we express no opinion on it.

This report is intended for the information and use of the Governor and General Assembly, management, and the citizens of the Commonwealth of Virginia and is a public record.

AUDITOR OF PUBLIC ACCOUNTS

DBC/clj



COMMONWEALTH of VIRGINIA

Nelson P. Moe
Chief Information Officer
Email: cio@vita.virginia.gov

Virginia Information Technologies Agency

11751 Meadowville Lane
Chester, Virginia 23836-6315
(804) 416-6100

TDD VOICE -TEL. NO.
711

October 9, 2015

Ms. Martha S. Mavredes
Auditor of Public Accounts
Post Office Box 1295
Richmond, Virginia 23218

Dear Ms. Mavredes:

Thank you for the opportunity to respond to the Auditor of Public Accounts' Review of the Commonwealth's Mobile Devices report. Overall we agree with the report's findings regarding our agency. Virginia Information Technologies Agency (VITA) has since taken steps to correct deficiencies related to the use of mobile devices at VITA, including the issuance of a Mobile Device Access Controls Policy in July 2014. Additional controls, processes and procedures are in development.

From an enterprise perspective, we plan to provide additional awareness and training to agencies on the Mobile Communications Use Technical Topic Report. As well, our new Telecommunications Expense Management and Billing System, scheduled for rollout in the first half of 2016, should provide additional billing detail as well as reports for analysis for our customer agencies.

As always, we appreciate the professionalism of your staff. Thank you for working with us and seeking our input.

Sincerely,

A handwritten signature in dark ink that reads "Nelson P. Moe".

Nelson P. Moe

AN EQUAL OPPORTUNITY EMPLOYER

VIRGINIA INFORMATION TECHNOLOGIES AGENCY

Karen Jackson
Secretary of Technology

Nelson Moe
Chief Information Officer of the Commonwealth

Dana Smith
Executive Director of Administration and Finance